

AMENDMENT TO THE CLAIMS:

The following claims replace all prior versions and listings of claims in the application:

1-34 cancelled.

35 (New). A method of managing digital signal processing, comprising:

providing a plurality of channels in a processor;

executing a plurality of algorithms in one or more said channels that use processing resources of the processor ;

fixing a high usage threshold of the processing resources for use by the algorithms;

exceeding, or anticipating the exceedance of, the high usage threshold by said executing of the algorithms; and

allocating the processing resources among the algorithms based on an estimated use of the processing resources by each algorithm and an achieved performance of each algorithm so as not to exceed the high usage threshold by a cumulative use of the processing resources by the executing algorithms.

36 (New). The method of claim 35, wherein said allocating further comprises allocating the processing resources among the algorithms based on an environmental input.

37 (New). The method of claim 35, wherein said allocating comprises prioritizing the allocation of the processing resources among the algorithms that exhibit greater requirements for processing resources based on the estimated use of each algorithm and the achieved performance of each algorithm.

38 (New). The method of claim 35, wherein said allocating further comprises:
de-prioritizing the allocation of the processing resources among the algorithms that exhibit lesser requirements for processing resources based on the estimated use of each algorithm and the achieved performance of each algorithm.

39 (New). The method of claim 38, wherein said allocating comprises removing a portion of the allocated processing resources from each algorithm that can execute using fewer processing resources.

40 (New). The method of claim 35, further comprising:
performing performance-degrading re-allocation of the processing resources when a cumulative amount of the processing resources are required that would exceed the high usage threshold.

41 (New). The method of claim 35, wherein said allocating further comprises setting a low usage threshold of the processing resources; and
re-allocating said processing resources to the algorithms when a cumulative

usage of said processing resources by the algorithms fall below said low usage threshold based on the estimated consumption of said processing resources by each algorithm and the achieved performance of each algorithm.

42 (New). The method of claim 35, wherein said executing the plurality of algorithms comprises executing one or more function of each algorithm that are capable of being managed.

43 (New). The method of claim 1, further comprising:

storing an estimate of a maximum required processing resource for execution of each algorithm and a minimum required processing resource for execution of each algorithm.

44 (New). The method of claim 35, further comprising:

providing an original estimate of maximum processing resources required for each algorithm;

monitoring actual use of the processing resources by the execution of each respective algorithm; and

providing the estimated consumption for each respective algorithm based on the original estimate and the actual use of the processing resources.

45 (New). The method of claim 35, wherein the executing a plurality of algorithms comprises executing a one or more functions of each algorithm concurrently.

46 (New). A system of processing resource management, comprising:

a plurality of communication channels that convey signals;

a processor, operably connected to the communication channels, that receives the signals from the communication channels and is programmed to:

execute a plurality of algorithms, using processing resources of the processor, in one or more digital channels;

maintain a high usage threshold of the processing resources used by the algorithms; and

when the use of the processing resources by the execution of the algorithms is anticipated to exceed or exceeds the high usage threshold, allocate the processing resources among the algorithms based on an estimated use of the processing resources by each algorithm and an achieved performance of each algorithm.

47 (New). The system of claim 46, wherein the processor is further programmed to:

allocate the processing resources among the algorithms based on an environmental input.

48 (New). The system of claim 46, wherein the processor is further programmed to:
prioritize allocation of the processing resources among the algorithms that exhibit greater requirements for processing resources based on the estimated use of each algorithm, the environmental input, and the achieved performance of each algorithm.

49 (New). The system of claim 46, wherein the processor is further programmed to:
de-prioritize the allocation of the processing resources among the algorithms that exhibit lesser requirements for processing resources based on the estimated use of each algorithm, the environmental input, and the achieved performance of each algorithm.

50 (New). The system of claim 46, wherein the processor is further programmed to:
perform performance-degrading re-allocation of the processing resources when a cumulative amount of required processing resources is anticipated to exceed or exceeds the high usage threshold.

51 (New). The system of claim 46, wherein the processor is further programmed to:
maintain a low usage threshold of the processing resources; and
re-allocate the processing resources to the algorithms when a cumulative usage of said processing resources by the algorithms fall below said low usage threshold based on the estimated consumption of said processing resources by each algorithm, the environmental input, and the achieved performance of each algorithm.

52 (New). The system of claim 46, wherein the processor is further programmed to:
allocate the processing resources among one or more functions of each
algorithm that are capable of being managed.

53 (New). A method of resource management in a processor having multiple
communication channels, comprising:

estimating a processing resource consumption of a plurality of functions of one
or more algorithms that are in a queue waiting to be executed;

executing the functions in one or more of the channels;

if a cumulative execution of the functions is anticipated to exceed a high
processing resource usage threshold for the processor, then allocating the processing
resources to each function according to the estimated use of the processing resources
for each function, an achieved performance of each function, and an environmental
condition so as to not exceed the processing resource usage threshold.

54 (New). The method of claim 53, further comprising:

performing performance-degrading re-allocation of the processing resources
when a cumulative amount of the processing resources are required that would exceed
the processing resource usage threshold.